

# Ultra-Narrow Bandpass Filters for Long Range Optical Telecommunications at 1064nm and 1550nm, Phase I

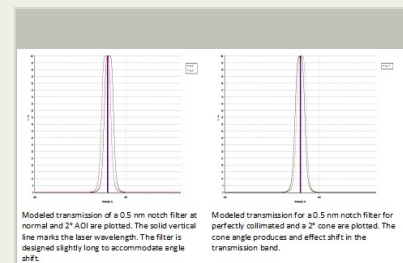
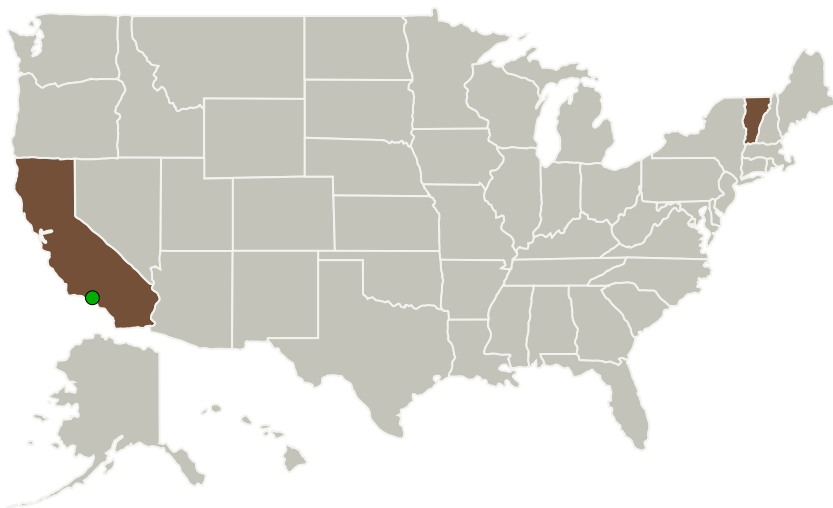
Completed Technology Project (2017 - 2017)



## Project Introduction

Ultra-narrow bandpass filters with high off-band rejection are needed to maximize signal to noise for free space communications. Omega Optical is developing NIR filters with less than 1 nm bandwidths, which are thermally stable, and provide high rejection of adjacent communication channels. This program will address advancing these filters from a technology readiness level (TRL) of 3 to TRL 5. Development focus will address the manufacturing, materials, and characterization issues needed for space qualification.


## Primary U.S. Work Locations and Key Partners



Ultra-narrow bandpass filters for long range optical telecommunications at 1064nm and 1550nm, Phase I Briefing Chart Image

## Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Images	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	3
Target Destinations	3

Organizations Performing Work	Role	Type	Location
Omega Optics, Inc.	Lead Organization	Industry	Austin, Texas
 Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California

### Primary U.S. Work Locations

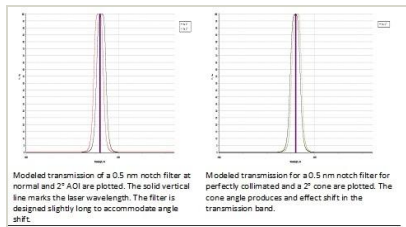
California	Vermont
------------	---------

# Ultra-Narrow Bandpass Filters for Long Range Optical Telecommunications at 1064nm and 1550nm, Phase I

Completed Technology Project (2017 - 2017)



## Images



### Briefing Chart Image

Ultra-narrow bandpass filters for long range optical telecommunications at 1064nm and 1550nm, Phase I Briefing Chart Image  
(<https://techport.nasa.gov/image/135636>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Organization:

Omega Optics, Inc.

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

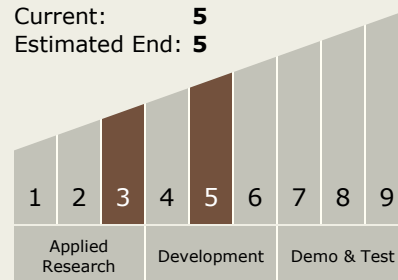
Carlos Torrez

### Principal Investigator:

Thomas Rahmlow

## Technology Maturity (TRL)

Start: 3  
Current: 5  
Estimated End: 5



# Ultra-Narrow Bandpass Filters for Long Range Optical Telecommunications at 1064nm and 1550nm, Phase I

Completed Technology Project (2017 - 2017)



## Technology Areas

### Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - └ TX05.1 Optical Communications
    - └ TX05.1.4 Pointing, Acquisition and Tracking (PAT)

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System